

NetScreen Application Note: Meeting the Needs of E-Businesses

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Introduction

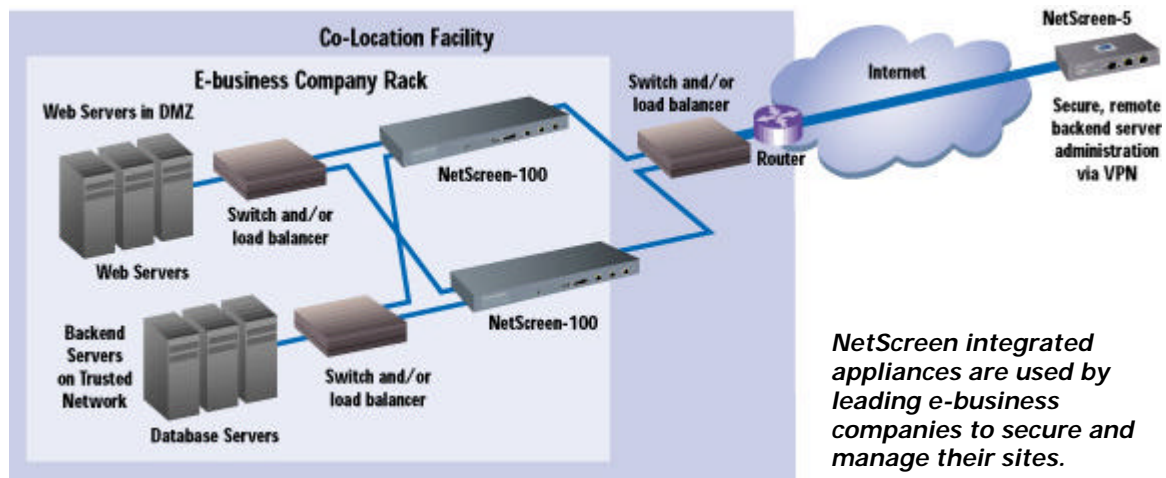
Critical to your success in the e-business market is a high-capacity, high-availability and secure web site. And to ensure long-term success, you need to move at Internet speed to stay ahead of the competition.

No matter whether you operate a web site that handles millions of hits a month or one that is just getting started, if your web infrastructure isn't appropriately scaled, the consequences can be severe. Internet "brownouts" and "blackouts" can cause web surfers to quickly flee to a competitive sites, seriously eroding consumer confidence in your site—and your company's stock valuation.

NetScreen Technologies Inc. purpose-built security appliances are used by leading e-businesses to secure their web sites and keep them operating at optimal performance. NetScreen products combine firewall, VPN and traffic shaping functionality in a high performance, ASIC-based security appliance. The NetScreen-100 received Data Communications' Tester's Choice awards for both firewall and traffic shaping. Data Communications found that the NetScreen-100 "offered the best combination of airtight security, screaming performance, and simple management."

Fast, Safe & Secure E-Business Sites

NetScreen Technologies Inc. provides the security appliances required to meet the performance and security requirements of emerging "dot com" companies as well as some of the highest traffic portals and e-business sites on the Internet, such as Tibco, emachines.com and ecampus.com. NetScreen's hardware-based security solutions provide robust processing, affording web operators the ability to secure their sites without sacrificing performance or reliability. Besides award-winning firewall capabilities, NetScreen products also offer traffic shaping and VPN capabilities, providing customers a complete security solution.



A well-designed security architecture is an essential component of any e-business site. The security architecture and security devices must address the needs of an emerging e-business, but then must be able to easily scale to accommodate rapid growth if the business is successful. The security solutions must be secure, easy to deploy, high performance, high capacity and optimized for the co-location environment where most e-business sites are hosted.

NetScreen security appliances address the key requirements when deploying an e-business infrastructure. Among the criteria required to successfully deploy a secure e-business environment are:

Airtight security: NetScreen products have received certification from the leading security association—the ICSA. NetScreen products also include sophisticated access policy definition capabilities, network address translation, port address translation and robust support for typical hacker attacks. And since NetScreen products are based on solid-state hardware platforms, there is no need to “harden” the operating system and platform as must need by done with software-based solutions.

Performance: E-business firewall solutions need to be scaled to support the bandwidth requirements of today as well as tomorrow. That’s why the NetScreen-100, with its wire-speed 100-Mbps firewalling and network address translation as well as 85 Mbps Triple DES IPsec VPN features, ensures that the needs of e-businesses can be met. For those with higher requirements, multiple NetScreen-100s can be deployed in a “firewall sandwich” with load balancing devices.

Total Capacity: An e-business site firewall must scale to handle a large number of simultaneous TCP connections. A single user hitting the web site could result in the opening up of 10 or 20 TCP connections—one for each element of the web page, such as a GIF. Software-based firewalls running on general-purpose operating systems and PC/workstation platforms are subject to the limitations of the OS and TCP stack they are running on. Most software-based firewalls can only handle 10,000 or maybe 20,000 total connections. The NetScreen-100 security appliance can handle 64,000 simultaneous TCP connections—four times more than the capacity of leading software-based firewalls.

Burst Capacity: Burst capacity, or number of new TCP connections that can be opened per second, is as important, and in many cases, more important than total firewall capacity. Bursts of traffic are common and hard to predict. If a large number of users hits a site at the same time, the firewall is likely to become overwhelmed. The NetScreen-100 can open 19,600 new TCP connections in 1 second to handle even the heaviest traffic bursts.

High Availability: To maintain security, a firewall should be designed so that in the event of a failure it will always fail “closed”—meaning that a failure must block traffic

and continue to protect the site. While this is great for maintaining security, it makes the site unavailable. As a hardware-based security appliance, NetScreen greatly reduces the risk of failure via its solid-state design (no moving parts). Mean time between failure (MTBF) for NetScreen products is estimated at 350,000 hours. In the unlikely event of a failure, NetScreen has support for redundant topologies and fail-over to a hot stand-by unit.

Form Factor and Rack Space: Most e-business sites are implemented in co-location facilities where the company rents a cage and rack space from the hoster. Rack space is expensive. NetScreen products have a slim 1U form factor, using a minimum co-location rack space.

Remote Management: Secure remote management is essential for firewalls implemented in a remote co-location facility. Web-based management can make installation and configuration far easier, but a command line interface (CLI) can be more powerful for the experienced user. Support for central management of multiple devices from a single management application is important in larger sites with multiple firewalls, or for sites that are mirrored across multiple co-location facilities. NetScreen's integrated web server allows for browser-based management as well as supporting CLI-based management via Telnet or a dial-up connection. Since NetScreen security appliances include VPN features, remote management can be performed through IPSec tunnels for maximum security.

VPN for back-end server administration and management: A typical e-business site will include front-end web servers available to the public, and will have back-end servers performing critical database functions to support the e-business site. The firewall security should protect these servers, but the site operator is likely to need to get access to these servers for data collection or administration. Being in remote co-location facilities requires that a secure connection be established between the corporate site and the company's cage in the co-location facility. This is often implemented with a private leased line, but the monthly cost can get expensive. With NetScreen's VPN features, a secure, encrypted tunnel can be created between the co-location facility cage

and the corporate site to allow for remote administration. This utilizes the existing Internet connections for the two sites and eliminates the cost of an expensive leased line.

NetScreen-100: Optimized for the E-Business Environment

The NetScreen-100 combines firewall, VPN and traffic shaping functionality in a high-performance, ASIC-based security appliance optimized for e-business environments. The NetScreen-100 received Data Communications' testers choice awards for both firewall and traffic shaping. Data Communications found that the NetScreen-100 "offered the best combination of airtight security, screaming performance, and simple management."

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